



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,982	09/30/2005	Heiko Doerr	095309.56052US	4316
23911 7590 03/07/2008 CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300			EXAMINER WILLIAMS, THOMAS J	
			ART UNIT 3683	PAPER NUMBER
			MAIL DATE 03/07/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/527,982

**Applicant(s)**

DOERR ET AL.

**Examiner**

Thomas J. Williams

**Art Unit**

3683

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 23-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23-37 and 39-44 is/are rejected.
- 7) ☒ Claim(s) 38 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

**DETAILED ACTION**

1. Acknowledgment is made in the receipt of the amendment filed December 28, 2007.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
4. Claims 23-37, 39 and 41-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,021,375 to Urai et al. in view of US 4,048,613 Ito et al.

Re-claims 23 and 44, Urai et al. teach a method and apparatus for automatic braking, comprising: unit 16 determines a driving situation of the first vehicle (subject vehicle), based upon an actual acceleration (ab) of the first vehicle; determining when a predefined warning condition is fulfilled based on the driving situation of the first vehicle, and on the predefined emergency braking deceleration; a driver warning is triggered if at least one predefined warning condition is fulfilled (such as a negative response to step 104); an automatic braking process is

activated in response to the driving situation of the first vehicle (such as rapidly closing in on a preceding vehicle), this causes the vehicle to decelerate with at least one of the predefined emergency braking deceleration values; the warning condition includes a predefined target safety distance (such as  $L_s$ ) and a predefined target relative speed between the first and second vehicle (see formula associated with determining  $L_s$ ), the target values are to be attained after the automatic braking process is completed; an actual acceleration of the first vehicle is determined, an actual current relative acceleration between the first and second vehicles is also determined (see determination of  $a_b$  and  $a_l$  in the formulas). However, Urai et al. teach a driver warning and triggering of the automatic braking as occurring simultaneously, rather than delaying the triggering of the automatic braking until a time period after the driver warning is initiated.

Ito et al. teach an automatic braking apparatus, wherein the automatic braking operation is commenced, or triggered, until expiration of a predefined time period after the driver warning has been triggered, see figures 2 and 3 ( $t_0$  a visual alarm is triggered, after which a slight brake pressure is applied, see  $\beta_1$  in figure 3, at  $t_1$  the automatic braking is triggered). This provides the occupants time to ready themselves for rapid deceleration, see column 4 lines 9-20. It would have been obvious to one of ordinary skill in the art to have provided the system of Urai et al. with this time lapse as taught by Ito et al., thus providing the occupants adequate time to assume a defensive posture, as taught in Ito et al.

Re-claim 24, Urai et al. teach the driver warning as including both visual and acoustic signals.

Re-claims 25, 26, 28, 34, 36 and 37, Urai et al. fails to teach a driver warning perceived haptically or at least two warning stages. Ito et al. teach at least two warning signals triggered

chronologically, the first is a visual warning triggered at  $t_0$ , the second is a slight brake pressure application  $\beta_1$  (which is perceived haptically) triggered after  $t_0$ ; in addition the automatic braking process is commenced at  $t_1$  after the warning period  $t_0-t_0'$  has expired; the time period is predefined as  $t_0-t_0'$ . It would have been obvious to one of ordinary skill in the art to have provided the system of Urai et al. with a plurality of driver warnings as taught by Ito et al., thus ensuring that the occupants would be aware of the impending actuation of the automatic brake.

Re-claim 27, 29-31, see figure 7, which illustrates various predefined decelerations and target relative speeds; a target relative speed of approximately zero would indicated a stop condition of the first vehicle, as such the automatic brake operation is completed.

Re-claim 32, figure 6 indicates a situation wherein the automatic braking is not triggered if the relative distance exceeds a predefined value.

Re-claim 33, it is expected that the process illustrated in figure 6 is a continuous loop, such that the automatic braking process is updated as the relative distance increases between the vehicles, whereupon at some point the process is not triggered, since the relative distance would exceed the predefined value.

Re-claim 35, Urai et al. teach the automatic braking process is aborted if the target relative speed and target relative distances are attained, as determined by the steps followed in figure 6.

Re-claims 39 and 41, the warning stage and subsequently the automatic braking ceases once it is determined that the danger of collision has been avoided, such as an increasing distance between the vehicles is developed due to the automatic braking. This will be determined as the system runs through the determination process after initiating the automatic braking.

Re-claim 42, the driving situation is determined by at least a relative distance between the first and second vehicles, the relative speeds between the two vehicles, and the relative accelerations between the two vehicles.

Re-claim 43, activation of the brake system generally results in activation of the brake lights, which would alert the drivers behind the subject vehicle.

5. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Urai et al. in view of Ito et al. as applied to claim 39 above, and further in view of US 6,292,753 to Sugimoto et al.

Urai et al. as modified by Ito et al. fail to teach monitoring the attentiveness of the driver based upon the activation of at least one operator controlled element. Sugimoto et al. teach an automatic braking process, wherein a driver activation of the brake pedal is sensed. This provides the ability to smoothly transfer the braking operation from the controller to the driver. It would have been obvious to one of ordinary skill in the art to have provided the braking system of Urai et al. with the capability of monitoring the desires of the vehicle operator, or driver, as taught by Sugimoto et al., thereby interjecting the wishes of the driver with regards to the braking operation.

#### ***Allowable Subject Matter***

6. Claim 38 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

7. Applicant's arguments filed December 28, 2007 have been fully considered but they are not persuasive. It is the opinion of the examiner that the emergency braking deceleration values

disclosed by Urai et al. are in fact predefined emergency braking deceleration values. Each braking deceleration value is implemented based upon a determined relative distance, velocity, and acceleration values between the first and second vehicle. Even though the current distance, velocity and acceleration values are calculated, these values must be compared to predefined values in order to make appropriate judgments. In addition, Urai et al. disclose that data obtained through experimentation is stored beforehand in the ECU, see column 4 lines 62-66. As such the rejection is maintained.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiries concerning this communication or earlier communications from the examiner should be directed to Thomas Williams whose telephone number is 571-272-7128. The examiner can normally be reached on Wednesday-Friday from 6:00 AM to 4:30 PM.

Art Unit: 3683

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi, can be reached at 571-272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-6584.

TJW

/Thomas J. Williams/  
Primary Examiner, Art Unit 3683

February 29, 2008